

documents [to be cross-referenced] by analyzing [a reference] at least one cross-reference between the [plurality of] documents [forming] in the set [of documents], and for extracting information about classification as document group information;

10           a document group keyword extraction device [for extracting] to extract a keyword contained in a document forming part of each group of documents by referring to the document group information; and

15           a document group keyword display device [for displaying] to display a title relevant to each group of documents and a corresponding keyword extracted from the group of documents by said document group keyword extraction device.

*Su* 2. (ONCE AMENDED) The apparatus according to claim 1, wherein said document group keyword display device displays with enhancement a group of documents containing a document specified by a user for retrieval, or a keyword specified for retrieval.

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B2* 3. (ONCE AMENDED) A relevant document display apparatus for displaying a group of documents containing cross-referenced message documents contributed to [be cross-referenced] at least one of a forum and a message board established through a computer network, comprising:

5           a document group analysis device [for classifying] to classify a plurality of documents forming a set of documents into at least one [or more] group of cross-referenced documents [to be cross-referenced] by analyzing [a reference] at least one cross-reference between the [plurality of] documents [forming] in the set [of documents], and for extracting information about classification as document group information;

10           a document attribute analysis device [for extracting] to extract document attribute information about an attribute of each document from a plurality of documents forming the set of documents; and

15           a document group structure display device [for displaying] to display cross-references in each group of documents in a tree structure in which at least one of the document attribute information [or] and abbreviated information for each document forming part of the

*A* *B1* *B2* group of documents is displayed [as] at each node [by referring to the document group information and the document attribute information].

8. (ONCE AMENDED) A relevant document display apparatus for displaying a group

*SUB* *B3* of documents containing cross-referenced message documents contributed to [be cross-referenced] at least one of a forum and a message board established through a computer network, comprising:

*A* *2 5* a document group analysis device [for classifying] to classify a plurality of documents forming a set of documents into at least one [or more] group of cross-referenced documents [to be cross-referenced] by analyzing [a reference] at least one cross-reference between the [plurality of] documents [forming] in the set [of documents], and for extracting information about classification as document group information;

*10* a topic analysis device [for] to further [classifying] classify each of the classified group of documents based on topics extracted from each document forming part of each group of documents, and extracting information about the further classification as topic classification information;

*15* a topic keyword extraction device [for extracting] to extract a keyword contained in a document relevant to each topic obtained by further classifying each of the groups of documents by referring to the document group information and the topic classification information; and

*20* a topic keyword display device [for displaying] to display, for each of the groups of documents and topics obtained by further [classifying] classification of the groups of documents, a relevant title and a keyword extracted by said topic keyword extraction device and associated with each topic.

*5* 9. (ONCE AMENDED) A relevant document display method for displaying a group of documents containing cross-referenced message documents contributed to [be cross-referenced] at least one of a forum and a message board established through a computer network, comprising [the steps of]:

5 classifying a plurality of documents forming a set of documents into at least one [or more] group of cross-referenced documents [to be cross-referenced] by analyzing [a reference] at least one cross-reference between the [plurality of] documents [forming] in the set [of documents];

10 extracting information about classification as document group information; extracting a keyword contained in a document forming part of each group of documents by referring to the document group information; and displaying a title relevant to each group of documents and a corresponding keyword extracted from the group of documents.

*A2*  
10. (ONCE AMENDED) The method according to claim 9, further comprising [the step of:] displaying with enhancement a group of documents containing a document specified by a user for retrieval, or a keyword specified for retrieval.

*A3*  
11. (ONCE AMENDED) A relevant document display method for displaying a group of documents containing cross-referenced message documents contributed to [be cross-referenced] at least one of a forum and a message board established through a computer network, comprising [the steps of]:

5 classifying a plurality of documents forming a set of documents into at least one [or more] group of cross-referenced documents [to be cross-referenced] by analyzing [a reference] at least one cross-reference between the [plurality of] documents [forming] in the set [of documents];

10 extracting information about classification as document group information; extracting document attribute information about an attribute of each document from a plurality of documents forming the set of documents; and displaying cross-references in each group of documents in a tree structure in which the document attribute information or abbreviated information for each document forming part of the group of documents is displayed as each node by referring to the document group information and the document attribute information.

*(X)*

12. (ONCE AMENDED) The method according to claim 11, further comprising [the step of:] displaying the cross-references in each group of documents in a tree structure in which a combination of an abbreviated name of an author and amount-of-document information for each document forming part of the group of documents is displayed as each node by referring to the document group information and the document attribute information.

13. (ONCE AMENDED) The method according to claim 11, further comprising [the step of:] displaying a plurality of topics extracted from a document contained in each group of documents as associated with each node forming part of the tree structure displayed for the group of documents.

*(X)*

14. (ONCE AMENDED) The method according to claim 13, further comprising [the step of:] displaying each topic and the relevant node in a same color for each group of documents.

15. (ONCE AMENDED) The method according to claim 11, further comprising [the step of:] displaying with enhancement a node corresponding to a document specified by a user for retrieval.

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16. (ONCE AMENDED) A relevant document display method for displaying a group of documents containing cross-referenced message documents contributed to [be cross-referenced] at least one of a forum and a message board established through a computer network, comprising [the steps of]:

5 classifying a plurality of documents forming a set of documents into at least one [or more] group of cross-referenced documents [to be cross-referenced] by analyzing [a reference] at least one cross-reference between the [plurality of] documents [forming] in the set [of documents];

extracting information about classification as document group information;

10 further classifying each of the classified group of documents based on topics  
extracted from each document forming part of each group of documents, and extracting  
information about the further classification as topic classification information;  
extracting a keyword contained in a document relevant to each topic obtained by  
further classifying each of the groups of documents by referring to the document group  
15 information and the topic classification information; and  
displaying, for each of the groups of documents and topics obtained by further  
classifying the groups of documents, a relevant title and a keyword extracted in said topic  
keyword extracting step and associated with each topic.

17. (ONCE AMENDED) A computer-readable storage medium [used] storing  
instructions to direct a computer to perform [the steps of] a method for displaying a group of  
documents containing cross-referenced message documents contributed to at least one of a  
forum and a message board established through a computer network, said method comprising:

5 classifying a plurality of documents forming a set of documents into at least one  
[or more] group of cross-referenced documents [to be cross-referenced] by analyzing [a  
reference] at least one cross-reference between the [plurality of] documents [forming] in the  
set [of documents];

extracting information about classification as document group information;

10 extracting a keyword contained in a document forming part of each group of  
documents by referring to the document group information; and

displaying a title relevant to each group of documents and a corresponding  
keyword extracted from the group of documents.

18. (ONCE AMENDED) A computer-readable storage medium [used] storing  
instructions to direct a computer to perform [the steps of] a method for displaying a group of  
documents containing cross-referenced message documents contributed to at least one of a  
forum and a message board established through a computer network, said method comprising:

5 classifying a plurality of documents forming a set of documents into at least one  
[or more] group of cross-referenced documents [to be cross-referenced] by analyzing [a  
reference] at least one cross-reference between the [plurality of] documents [forming] in the  
set [of documents];

10 extracting information about classification as document group information;  
extracting document attribute information about an attribute of each document  
from a plurality of documents forming the set of documents; and

15 displaying cross-references in each group of documents in a tree structure in  
which the document attribute information or abbreviated information for each document  
forming part of the group of documents is displayed as each node by referring to the document  
group information and the document attribute information.

19. (ONCE AMENDED) A relevant document display apparatus for displaying a  
group of documents containing cross-referenced message documents contributed to at least one  
of a forum and a message board established through a computer network, comprising:

5 a contents estimation [means for estimating] device to estimate contents of the  
group of documents based on contents of a document and patterns of opinion input by authors  
from a document database storing a group of cross-referenced documents, and [for generating]  
to generate an index corresponding to a topic pattern of the estimated contents;

10 an input [means for inputting] device to input a retrieval request [corresponding  
to] for the document database from a user;

15 a retrieval engine [means for retrieving] device to retrieve a document in the  
document database; and

a view generation [means for generating one or more] device to generate a  
plurality of views using a retrieval result from said retrieval engine [means] device and the  
index, switching the [one or more] views, and displaying the views on a display device.

20. (ONCE AMENDED) The apparatus according to claim 19, wherein said view  
generation [means allows a user to easily understand an entire structure of reference among

displayed documents by simply displaying] device displays a reference tree structure of displayed documents and information relating to a node corresponding to each document by  
5 grouping documents having an identical attribute in displayed documents, so that a user can easily understand an entire structure of references among displayed documents.

21. (ONCE AMENDED) The apparatus according to claim 19, wherein said view generation [means allows a user to easily understand an entire structure of reference among displayed documents by simply displaying] device displays a reference tree structure of displayed documents and information relating to a node corresponding to each document by  
5 selecting only a document containing a large number of references in the displayed documents based on a size of a screen, so that a user can easily understand an entire structure of references among displayed documents.

22. (ONCE AMENDED) The apparatus according to claim 19, wherein said view generation [means allows a user to easily understand an entire structure of a retrieval result from a document database by simply displaying] device displays a reference tree structure of displayed documents and information relating to a node corresponding to each document by  
5 selecting only a document containing a large number of references to documents containing a user input keyword, so that a user can easily understand an entire structure of references among displayed documents.

23. (ONCE AMENDED) The apparatus according to claim 19, wherein said view generation [means allows a user to easily understand an entire structure of a retrieval result from a document database by displaying reference] device displays references among displayed documents with a topic pattern estimated about the documents by said contents estimation  
5 [means] device, so that a user can easily understand an entire structure of references among displayed documents.

24. (ONCE AMENDED) The apparatus according to claim 19, wherein said view generation [means allows a user to easily understand a retrieval result from a document database related to time information by displaying] device displays, in a calendar format, only documents in a specified time period in displayed documents, so that a user can easily understand a retrieval result from a document database related to time information.

25. (ONCE AMENDED) The apparatus according to claim 19, wherein said view generation [means allows a user to easily understand only an important portion of reference of documents in a document database by displaying] device displays, at a high intensity level, a specified topic pattern estimated by said contents estimation [means] device, so that a user can easily understand an important portion of documents in a document database.

26. (ONCE AMENDED) The apparatus according to claim 19, wherein said view generation [means allows a user to easily understand a combination of a question and an answer corresponding to a question item by instructing] device instructs said retrieval engine [means] device to retrieve only a document corresponding to a question and an answer in a specified topic pattern estimated by said contents estimation [means] device, so that a user can easily understand a combination of a question and an answer corresponding to a question item.

27. (ONCE AMENDED) The apparatus according to claim 19, wherein said view generation [means allows a user to easily understand only an important portion of reference of documents in a document database by displaying] device displays a specified author at a high intensity level based on a history of input opinions for each document in the document database and a specified topic pattern estimated by said contents estimation [means] device, so that a user can easily understand an important portion of documents in a document database.

28. (ONCE AMENDED) The apparatus according to claim 19, wherein said view generation [means allows a user to easily understand reference among documents in a document database from an author's viewpoint by displaying] device displays as a directed

graph an author of each document in the document database as a node, the reference among the  
5 documents as a link, and a time of reference as intensity of the link, so that a user can easily  
understand references among documents in a document database from an author's viewpoint.

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30. (ONCE AMENDED) A method of displaying a relevant document for displaying  
a group of documents containing cross-referenced message documents contributed to at least  
one of a forum and a message board established through a computer network, comprising [the  
steps of]:

5 estimating contents of the group of documents based on contents of a document  
and patterns of opinion input by authors from a document database storing a group of cross-  
referenced documents;

generating an index corresponding to a topic pattern of the estimated contents;  
inputting a retrieval request corresponding to the document database from a

10 user;

retrieving a document in the document database to produce a retrieval result;

and

generating [one or more] a plurality of views using [a] the retrieval result [from  
said retrieval engine means] and the index, switching the [one or more] views, and displaying  
15 the views on a display device.

31. (ONCE AMENDED) A computer-readable storage medium [used] storing  
instructions to direct a computer to perform [the steps of] a method for displaying a group of  
documents containing cross-referenced message documents contributed to at least one of a  
forum and a message board established through a computer network, said method comprising:

5 estimating contents of the group of documents based on contents of a document  
and patterns of opinion input by authors from a document database storing a group of cross-  
referenced documents;

generating an index corresponding to a topic pattern of the estimated contents;